

MARENINA, A.I.; MAYOROV, F.P., zaveduyushchiy.

Investigating the dynamics of sleep in man by measuring the electric resistance of the skin surface. Trudy Inst.fiziol. 1:316-319 '52.

(MLRa 5:8)

1. Laboratoriya fiziologii i patologii vyzhshey nervnoy deyatel'nosti.
(Sleep) (Skin)

MARENINA, A.I.; MAYOROV, F.P., zavednyashchiy.

Investigating the dynamics of sleep by measuring skin potentials. Trudy
Inst.fiziol. 1:320-324 '52. (MLA 5:3)

1. Laboratoriya fiziologii i patologii vysshey nervnoy deyatel'nosti.
(Sleep) (Skin)

MARENINA, A.I.; MAYOROV, F.P., zaveduyushchiy.

Electroencephalographic study of natural and hypnotic sleep in man. Trudy
Inst.fiziol. 1:325-332 '52. (ML9A 6:8)

1. Laboratoriya fiziologii i patologii vysshey nervnoy deyatel'nosti.
(Sleep)

MARENINA, A.I.; MAYOROV, F.P., zavednyushchiy.

Investigation of the somnambulant phase of hypnosis by the electroencephalographic method. Trudy Inst.fiziol. 1:333-338 '52. (MLA 6:8)

1. Laboratoriya fiziologii i patologii vyshey nervnoy deyatel'nosti.
(Hypnosis) (Electroencephalography)

ANDREYEV, B.V.; MAYOROV, F.P., zaveduyushchiy.

Investigating the dynamics of sleep in children by using an activity recorder. Trudy Inst.fiziol. 1:339-344 '52. (MLA 5:8)

1. Laboratoriya fiziologii i patologii vysshey nervnoy deyatel'nosti.
(Sleep)

KOROTKIN, I.I.; MAYOROV, F.P., zavednyushchiy.

Effect of stimulus-words as conditioned inhibitors in wakeful and hypnotic states. Trudy Inst.fiziol. 1:345-355 '52. (ML9A 6:8)

1. Laboratoriya fiziologii i patologii vysshney nervnoy deyatel'nosti.
(Association of ideas)

PLESHKOVA, T.V.; MAYOROV, F.P., *saveduyushchiy.*

Investigation of the cortical non-conditioned and conditioned inhibition in hysterical neuroses. *Trudy Inst.fiziol.* 1:356-368 '52. (MLA 6:8)

1. *Laboratoriya fiziologii i patologii vysshey nervnoy deyatel'nosti.*
(Hysteria)

ANDREYEV, B.V.; KARAPETIAN, Ye.A.; MAYOROV, F.P., zaveduyushchiy; KRYSHOVA, N.A., zaveduyushchaya.

Peculiarities of nocturnal sleep in narcolepsy according to data obtained by the activity recorder. Trudy Inst.fiziol. 1:376-380 '53. (MIRA 6:8)

1. Laboratoriya fiziologii i patologii vysshey nervnoy deyatel'nosti (for Mayorov and Andreyev). 2. Sektor organicheskikh nervnykh rasstroystv (for Kryshova and Karapetyan). (Sleep)

ANDREYEV, B.V.; MAYOROV, F.P., professor, zaveduyushchiy; BYKOV, K.M., akademik, direktor. ~~_____~~

Expediency of designating bromine in sleep therapy. Klin.med. 31 no.9:64-67 S '53. (MLRA 6:11)

1. Laboratoriya fiziologii i patologii vysshey nervnoy deyatel'nosti Instituta fiziologii im. akademika I.P.Pavlova Akademii nauk SSSR (for Mayorov). 2. Institut fiziologii im. akademika I.P.Pavlova Akademii nauk SSSR (for Bykov). (Bromides) (Barbituric acid) (Sleep)

MAYOROV, F.P.; MARENINA, A.I.

Treatment of causalgia by paravertebral diathermy. Zhur.nevr.1 psikh. 53
no.6:465-466 Je '53. (MLA 6:6)

1. Institut fiziologii imeni I.P.Pavlova Akademii nauk SSSR. (Causalgia)

MAYOROV, F.P.; TARASOV, G.A., redaktor; SMIRNOVA, A.V., tekhnicheskii
redaktor

[A history of theories on conditioned reflexes] Istorii uchenia
ob uslovnykh refleksakh. 2-e, ispr. i dop. izd. Moskva, Izd-vo
Akademii nauk SSSR, 1954. 367 p. (MLA 7:10)
(Conditioned response)

MAYOROV, F.P.

USSR/Medicine - Dream phenomena

Card 1/1 : Pub. 86 - 5/38

Authors : Mayorov, F. P. and Vol'pert, I. E.

Title : Sleep and dreams

Periodical : Priroda 43/12, 42-50, Dec 1954

Abstract : The theory is accepted as basic that sleep is caused by the accumulation in the blood of certain substances that are destroyed and eliminated during sleep, but that a special center in the brain, the third ventricle, determines the state of sleeping or waking. This is based on the fact that an inflamed condition is observed in the walls of this cavity in persons suffering from sleeping sickness, and that by electrically stimulating this part sleep can be produced. Experiments in producing sleep in dogs are described. The author finds that an inhibiting force, that can be caused by various outside stimuli, spreads over the outer covering on the brain and that dreams are simply a chaotic releasing of brain-cell sequences. Diagrams; graphs.

Institution :

Submitted :

BYKOV, K.M., akademik, redaktor; MAYOROV, F.P., redaktor; DAVIDENKOV,
S.N., redaktor; KHYSHOVA, N.A., redaktor; FEDOROV, V.K., redaktor;
TARASOV, G.A., redaktor; SMIRNOVA, A.V., tekhnicheskiy redaktor.

[Pavlov's "Wednesday clinics"; transcription of sessions of the
neurological and psychiatric clinics] Pavlovskie klinicheskie
sredy; stenogrammy zasedaniy v nervnoi i psikhiatricheskoi
klinikakh. Moskva, Vol.2, 1934, 1955. 579 p. (MLBA 8:12)

1. Akademiya nauk SSSR. Institut fiziologii imeni I.P.Pavlova.
(NEUROLOGY) (PSYCHIATRY)

MAYOROV, F.P.

ON THE RESULTS OF THE CENTRAL NERVOUS SYSTEM

pp. 111, reports given at the 2nd International
Congress of Physiologists, Brussels, 1-4 Aug. 1957

Translation B-1111

MAYOROV, F. P.

"Changes Arising in the Higher Nervous Activity of Dogs Under the Influence of Irradiation by Roentgen Rays of the Cervical Section of the Vegetative Nervous System," by F. P. Mayorov, B. V. Pavlov, and N. Ya. Kipatova, Laboratory of Physiology and Pathology of Higher Nervous Activity (head, F. P. Mayorov), Trudy Instituta Fiziologii imeni I. P. Pavlov (Works of the Institute of Physiology imeni I. P. Pavlov), Moscow-Leningrad, Publishing House of the Academy of Sciences USSR, Vol 5, 1956, pp 79-102

Tests were conducted on five dogs in an effort to explain the influence of repeated irradiation by large doses of X rays (6,000 and 8,000 r) of the neck of: (1) intact dogs, (2) dogs with both superior cervical sympathetic ganglia removed, and (3) dogs with splanchnic nerves removed on both sides. The method used was that of salivary secretion.

Sum. 1305

MAYDOROV, F. P.

Results proved that irradiation of the neck by X rays at the site of the distribution of superior cervical sympathetic ganglia caused different changes in the higher nervous activity of intact and partially sympathectomized dogs. Thus: (1) In intact dogs there was a strong reduction in the value of conditioned and unconditioned reflexes, and these changes were of an irreversible nature for a long time. In certain cases hypnotic phases appeared which continued up to 3 weeks. (2) Irradiation by similar doses (6,000 and 8,000 r) of the neck of dogs who had undergone removal of the superior cervical sympathetic ganglia and those with severed splanchnic nerves caused in some cases a significant and prolonged rise of positive conditioned reflexes and in others their fall.

Histological changes in internal organs are described.

SUM. 1305

MAYOROV, F.P.; FIRSOV, L.A.

~~Dynamic stereotype~~
Dynamic stereotype in anthropoids (chimpanzee). Zmr.vys.nerv.deiat.
6 no.1:44-52 Ja-F' 56. (MIRA 9:7)

1. Laboratoriya fiziologii i patologii vysshey nervnoy deyatel'no-
sti Instituta fiziologii imeni I.P.Pavlova Akademii nauk SSSR.
(ANTHROPOID,

chimpanzee, cortical motor dynamic stereotype (Rus))
(CEREBRAL CORTEX, physiology,
motor dynamic stereotype of chimpanzee (Rus))

MAYOROV, F.P.; PIRSOV, L.A.

~~Study of sleep dynamics in the chimpanzee.~~ Dokl. AN SSSR 109 n0.1:229-
232 J1-Ag '56. (MIRA 9:10)

47. Laboratoriya fiziologii i patologii vysshey nervnoy deyatel'nosti
Instituta fiziologii imeni I.P. Pavlova Akademii nauk SSSR. Predstavleno
akademikom K.M. Bykovym.

(SLEEP)

MAYOROV, F.P.; FIRSOV, L.A.

~~Experimental study of right-handedness in the chimpanzees. Dokl.~~
AN SSSR 109 no.5:1065-1068 Ag. 1956. (MLBA 9:10)

1. Institut fiziologii imeni I.P.Pavlova Akademii nauk SSSR. Pred-
stavleno akademikom K.M. Bykovym.
(CHIMPANZEES) (LEFT- AND RIGHT-HANDEDNESS)

BYKOV, K.M.
BYKOV, K.M., akademik, otvetstvennyy red.; MAYOROV, F.P., zamestitel'
otvetstvennogo red.; DAVIDENKOV, S.N., red.; KRYSHOVA, N.A., red.;
FEDOROV, V.K., red.; TARASOV, G.A., red. izdatel'stva; SMIRNOVA, A.V.,
tekhn. red.

[Pavlov's "Wednesday clinics"; transcriptions of sessions of the
neurological and psychiatric clinics] Pavlovskie klinicheskie sredi;
stenogrammy zasedanii v nervnoi i psikhiatricheskoi klinikakh.
Moskva. Vol. 3. (1935-1936). 1957. 492 p. (MIRA 10:12)

1. Akademiya nauk SSSR, Institut fiziologii imeni I.P. Pavlova.
(NERVOUS SYSTEM--DISEASES)

SOLOV'YEV, A.V., otvetstvennyy redaktor; AYRAPETIYANTS, P.Sh., redaktor;
BIRYUKOV, D.A., redaktor; VIADIMIROV, G.Ye., redaktor; KOLOSOV, N.G.,
redaktor; KRASUSKIY, V.K., redaktor; KURTSIN, I.T., redaktor;
MAYOROV, F.P., redaktor; OL'EYANSKAYA, R.P., redaktor; RIKKL', A.V.,
redaktor; CHERNIGOVSKIY, V.N., redaktor; FEDOROVA-GROT, A.K.,
redaktor; BARSUKOVA, Z.A., redaktor izdatel'stva; KRUGLIKOVA, N.A.,
tekhnicheskij redaktor.

[Problems of the physiology of the central nervous system; a collection
celebrating the 70th birthday of Academician K.M.Bykov] Problemy
fiziologii tsentral'noi nervnoi sistemy; sbornik, posviasuchennyi
70-letiu so dnia rozhdeniia akademika K.M.Bykova. Moskva, 1957.
632 p. (MIRA 10:10)

1. Akademiya nauk SSSR. Institut fiziologii.
(NERVOUS SYSTEM)

MAYOROV F.P.

LIPATOVA, N.Ya.; MAYOROV, P.P.; PAVLOV, B.V.

Effect of total body irradiation on the higher nervous activity in
dogs. Trudy Inst. fiziol. 6:310-321 '57. (MIRA 11:4)

1. Laboratoriya fiziologii i patologii vysshey nervnoy deyatel'nosti
(zaveduyushchiy P.P. Mayorov)
(NERVOUS SYSTEM) (X RAYS--PHYSIOLOGICAL EFFECT)

USSR / Human and Animal Physiology. Nervous System.

T-10

Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 3868

Author : Mayorov, F. P.; Firsov, I. A.

Inst : AS USSR

Title : Experimental Study on Right-Handedness in the Chimpanzee

Orig Pub : Probl. fiziol. tsentr. nervn. systemy. M.-L., AN SSSR, 1957, 343-351

Abstract : In 18 series of experiments with 3 chimpanzees, conducted by the symmetric labyrinth method with a functional load, all animals during a 1½ year period predominantly used the right hand. The left hand, as functionally less labile, was used by 2 chimpanzees only when obstacles to the right hand were encountered. The duration of the motion reaction was somewhat shorter counter-clockwise than clockwise. Position of the

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- USSR / Human and Animal Physiology. Nervous System.

T-10

Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 3868

experimenter, location of door and door-lock as well as
of other components of the conditioned stimulant had no
effect on the results of the experiments. -- A. M. Ryabin-
ovskaya

Card 2/2

USSR/Human and Animal Physiology - The Effect of Physical Factors. T
Ionizing Radiation.

Abs Jour : Ref Zhur Biol., No 3, 1959, 13401
Author : Lipatov, N.Ya., Mayorov, F.P., Pavlov, B.V.
Inst : Institute of Physiology, AS USSR
Title : Effect of Total Radiation by Roentgen Rays on Higher
Nervous Activity of Dogs.
Orig Pub : Tr. In-ta fiziol. AN SSSR, 1957, 6, 310-321
Abstract : Roentgen radiation by fractionated doses of 12.5 r
with a total dosage of 150 r and doses of 25, 50, and
100 r with the total dosage 300 and 600 r evoked chan-
ges in the HNA of dogs. After application of the same
dose to one dog the conditioned reflexes increased,
and only after a month and a half did they begin to
recede; in others a decrease of reflexes began at the

Card 1/2

- 159 -

MAYOROV, F.P.

Localization of conditioned inhibition in the brain cortex. Nauch.
soob. Inst. fiziol. AN SSSR no.1:49-51 '59. (MIRA 14:10)

1. Laboratoriya fiziologii i patologii ~~vyshey~~ nervnoy deyatel'nosti
(zav. - F.P.Mayorov) Instituta fiziologii imeni Pavlova AN SSSR.
(CONDITIONED RESPONSE)
(BRAIN—LOCALIZATION OF FUNCTIONS)

LIPATOVA, N.Ya.; MAYOROV, P.P.

Studying the effect of total-body X irradiation on the higher nervous activity in dogs. Trudy Inst.fiziol. 8:70-76 '59.

(MIRA 13:5)

1. Laboratoriya fiziologii i patologii vysshey nervnoy deyatel'-nosti (zaveduyushchiy - P.P. Mayorov) Instituta fiziologii im. I.P. Pavlova AN SSSR.

(X RAYS--PHYSIOLOGICAL EFFECT) (CONDITIONED RESPONSE)

MAYOROV, F.P.; PIRSON, L.A.

Formation of conditioned motor responses in primates (chimpan-
zees) to speech sound complexes. Trudy Inst.fiziol. 8:150-156
'59. (MIRA 13:5)

1. Laboratoriya fiziologii i patologii vysshey nervnoy deyatel'-
nosti (zaveduyushchiy - F.P. Mayorov) Instituta fiziologii im.
I.P. Pavlova AN SSSR.
(CONDITIONED RESPONSE)

KOMAROVA, T.F.; MAYOROV, F.P.; FIRSOV, L.A.

Experimental study of sleep in anthropoid apes (chimpanzee).
Fiziol.zhur. 45 no.8:924-931 Ag '59. (MIRA 12:11)

1. From the I.P.Pavlov Institute of Physiology, Leningrad.
(SLEEP, physiology)

MAYOROV, P.P.

"Internal inhibition as a physiological problem" by P.K. Anokhin.
Reviewed by F.P. Mayorov. Fiziol.zhur. 45 no.9:1166-1168 S '59.

(MIRA 13:1)

(INHIBITION)

(ANOKHIN, P.K.)

MAYOROV, F.P.

Some problems of the theory of cortical inhibition. Fiziol.zhur.
48 no.5:606-615 My '62. (MIRA 15:8)

1. Laboratoriya fiziologii i patologii vysshey nervnoy deyatel'nosti
Instituta fiziologii imeni I.P.Pavlova AN SSSR, Leningrad.
(CEREBRAL CORTEX)

MAYOROV, F.P. [deceased]; FIRSOV, L.A.

Physiological analysis of the so-called foresight in chimpanzees.
Nauch.sob. Inst.fiziol. AN SSSR no.3:112-116 '65. (MIRA 18:5)

1. Laboratoriya fiziologii i eksperimental'noy patologii vysshey
nervnoy deyatel'nosti (zav. - F.P.Mayorov [deceased]).

MAYOROV, F. V.

"Review of P. I. Muzychenko's 'Universal Parabolic Rheostat'," Iz. Ak.
Nauk SSSR, Otdel Tekh Nauk, No.3, 1949

MAYOROV, Fedor Vasil'yevich

Electronic computers and their applications. Wright-Patterson Air Force Base, Prepared by Technical Documents Liaison Office, 1961.

466 l. illus., diagrs., tables. (MCL-506/1)

Translated from the original Russian: Elektronnyye vychislitel'nyye mashiny i ikh primeneniye, Moscow, 1959.

Includes references.

APR 49

USSR/Engineering
Instrument, Measuring
Magnetostriktion

"Magnetostriktion Measurement of Deformation in
Machine Parts," F.V. Mayorov, Cand Tech Sci,
Moscow Power Eng Inst imeni Molotov, 6 pp

"Elektrichestvo" No 4

Theory and experimental results of using method for
measuring deformations in machine parts with
permallyoy transmitting element soldered on part
to be tested. Error in measuring deformations
with permallyoy transmitting elements is not
greater than 5%.

Method
used to solder with
permallyoy element on part
to be tested. Deformation
measured is not

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95167/65 V2

MAJOROV, F. V.

MAYOROV, F. V.

PA 54/49T51

USSR/Engineering
Internal Combustion Engines
Electrical Measurements

Jun 49

"Review of L. Ya. Volchok's Book, 'Electrical Measuring Methods in Internal Combustion Motors,'" F. V. Mayorov, Cand Tech Sci, Moscow Power Eng Inst imeni Molotov, 1 p

"Elektrichestvo" No 6

Favorably reviews subject book, one of first comprehensive works on electrical measurements of non-electrical values.

54/49T51

MAYOROV, F. V.

"Review of P. M. Pfluyer's book 'The Electrical Measurement of Mechanical Quantities'," Elektrichestvo, No.1, 1950

Inst. Precision Mechanics and Calculating Techniques, Dept. Tech. Sci., AS USSR

MAYOROV, F. V.

Mayorov, F. V. The electrical representation of functions.
Elektrichestvo 1950, no. 11, 51-57 (1950). (Russian)

The editor of Elektrichestvo points out that the work of the author in constructing universal function generating potentiometers, briefly abstracted in Izvestiya Akad. Nauk SSSR, Otd. Tehn. Nauk 1947, 1576-1578 (1947), anticipated the similar work of G. A. Korn [Rev. Sci. Instruments 21, 77-81 (1950); these Rev. 11, 401]. The potentiometers described in the present paper consist of about 8000 turns of very fine enamel covered constantan wire wound on an

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themselves properly determined function generating potentiometers, all controlled from one y shaft, $f(x, y)$ is approximately represented. A circuit is shown and discussed for $f(x, y, z)$. It includes a linear potentiometer divided into n sections each shunted by a function generating potentiometer positioned by a servo. Each of the servos is controlled by a network such as already described for generating a function of two variables. As an example of accuracy attained, the author describes a nonadjustable potentiometer for the sine function. It is 80 mm in diameter, non-uniformly wound, and is credited with less than .03% error due to use of 4 shunt resistances near 90° and the same number near 270° .

R. Church (Annapolis, Md.).

Source: Mathematical Reviews,

Vol 12, No. 10

Small

MAYOROV, F.V.

USSR/Electronics - Calculators

Card 1/1 Pub. 86 - 2/33

Authors : Mayorov, P. V., Prof.

Title : ~~Electronic calculating machines~~
: Electronic calculating machines

Periodical : Priroda 43/11, 13-23, Nov 1954

Abstract : Electronic calculators which can do 20,000 additions or 2,000 multiplications of 10-digit numbers are described. The machines are divided into two classes: the digital machines performing the fundamental operations of arithmetic and the analogue machines with uninterrupted action. In the latter the precision of the solution of a problem is limited by the precision of the voltage, which, in turn, depends on the technical design of the elements of the machine. The design of the electronic digital machines is described, the arithmetical operations performed by it are explained, and details are given of the design and functioning of its elements, particularly, of those parts called "remembering devices." Illustration; drawings; diagrams.

Institution : ...

Submitted : ...

MAYOROV, Fedor Vasil'yevich, doktor tekhnicheskikh nauk, professor;
KIPNIS, S.Ye., Fedaktor; FURMAN, G.V., tekhnicheskiiy redaktor.

[Electronic calculating machines] Elektronnye vychislitel'nye
mashiny. Moskva, Izd-vo "Znanie," 1955. 39 p. (Vsesoiuznoe
obshchestvo po rasprostraneniuiu politicheskikh i nauchnykh znani
Ser. 4, no.37) (MLRA 8:12)
(Electronic calculating machines)

MAYOROV, Fedor Vasil'yevich; RAGOZIN, Yu.D., kandidat tekhnicheskikh nauk, dotsent, redaktor; YALTUNOVSKAYA, M.V., redaktor; TUMARKINA, N.A., tekhnicheskii redaktor

[Electronic regulators] Elektronnye regulatory. Moskva, Gos. izd-vo tekhniko-teoret. lit-ry, 1956. 492 p. (MLRA 9:7)
(Electronic control)

MAYEROV, P., professor, doktor tekhnicheskikh nauk

Future electronic calculating machines. Radio no. 11:13 N'55.
(Electronic calculating machines) (MLRA 9:1)

MAYOROV, F., professor, doktor tekhnicheskikh nauk

Electronic calculating machines. Radio no. 11:46-49 N' 55.
(Electronic calculating machines) (MIRA 9:1)

MAYOROV, F., Dr. Tech. Sci. Prof.

Electronic Computing Machines," from the book Modern Military Technology, 1956,
page 235.

Translation 1114585.

MAYOROV, F. V., Dr. of Tech. Sci.

"Use of Digital Integrating Machines for Automatic Control Processes" a paper presented at the Conference on Methods of Development of Soviet Mathematical Machine-Building and Instrument-Building, 12-17 March 1956.

Translation No. 596, 8 Oct 56

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PHASE I BOOK EXPLOITATION

SOV/1344

Mayorov, Fedor Vasil'yevich

Elektronnyye tsifrovyye vychislitel'nyye ustroystva; elementy i skhemy
(Electronic Digital Computers; Elements and Circuits) Moscow, Gosenergoizdat,
1957. 159 p. (Series: Massovaya radiobiblioteka, vyp. 285) 25,000 copies
printed.

Ed.: Shul'gin, K. A.; Tech. Ed.: Medvedev, L. Ya.; Editorial Board of Series:
Berg, A. I., Dzhigit, I. S., Kulikovskiy, A. A., Smirnov, A. D., Tarasov,
F. I., Chechik, P. O., and Shamshur, V. I.

PURPOSE: The book is intended for readers thoroughly familiar with the
fundamentals of electronics.

COVERAGE: The author describes the principle of operation of electronic digital
computers and their component elements. Special attention is given to a
description of elements using vacuum tubes, diode and triode transistors, and
ferrite cores. He also discusses memory units and gives information on their
performance. Basic data on Soviet and foreign universal digital computers
are presented in tabular form on pp. 10-13. No personalities are mentioned.
There are no references.

~~Card 1/2~~

MAYOROV, F. V.

PHASE I BOOK EXPLOITATION 711

Akademiya nauk SSSR. Institut tochnoy mekhaniki i vychislitel'noy tekhniki
Vychislitel'naya tekhnika (Computer Engineering) Moscow, Izd-vo AN SSSR,
1958. 150 p. 4,500 copies printed.

Responsible Ed.: Lebedev, S. A., Academician; Ed. of Publishing House:
Grigor'yev, Ye. N.; Tech. Ed.: Prusakova, T. A.

PURPOSE: This book is intended for specialists engaged in the design and use
of electronic computers.

COVERAGE: A number of problems of computer engineering is discussed in this
collection of articles. The power supply system of high-speed electronic
computers of the USSR Academy of Sciences, new computer components and
devices, and methods of controlling arithmetic units are covered in this
publication. Methods of selecting the necessary word from the mechanical
dictionary in machine translation and the terminology of modern computing
machines are also presented. For references see Table of Contents.

TABLE OF CONTENTS:

From the Editor

3

Card 1/8

Computer Engineering

711

Shcherbakov, O. K. Power Supply System of the High-Speed Electronic

Computer of the USSR Academy of Sciences

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This article represents a summary of a three-year period (1952-1955) of observing the operation of power-supply equipment for the high-speed electronic computer of the USSR Academy of Sciences. The results of a number of experiments conducted during that period are given and the improvements which may be applied in future projects are discussed. No personalities are mentioned.

Mayorov, F. V. Digital Differential Analyzers

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A description of the construction and operation of various components of digital differential analyzers is given. Methods of solving different problems on the analyzer are also presented. It is stated that the described analyzer was developed in the USA in 1950. There are 22 references, of which 1 is Soviet and 21 English.

Golovistikov, P. P. Dynamic Triggers and Their Use in Parallel-action Computers

82

Various types of dynamic triggers such as those used in shift circuits, memory capacitor triggers, and delayed-line triggers of computers are discussed in this article. Pulse code inversion and addition, pulse-shift operation, and pulse decoder operation are also presented. The article

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2

MAYOROV, F. V.

"Digital Differential Analyzers"

Avtomaticheskoye upravleniye i vychislitel'naya tekhnika, vyp. 1, Moscow, Mashgiz, 1958, 302pp. (Automatic Control and Computing Technique, v. 1.)

The book is a collection of eleven articles presented at a seminar on the theory and technique of automatic control and computing machines. The seminar was organized by the Sci. and Tech. Soc. of Instrument Making, the Moscow Higher Technical School im Bauman, and the Moscow Aviation Inst im S. Ordzhonikidze. The Moscow Physics and Engineering Inst. also participated in the seminar.

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SOV/112-59-5-9561

Translation from: Referativnyy zhurnal. Elektrotehnika, 1959, Nr 5, p 158 (USSR)

AUTHOR: Mayorov, E. V.

TITLE: Digital Integrating Machines

PERIODICAL: V sb.: Avtomat. upravleniye i vychisl. tekhn. Nr 1, M., Mashgiz, 1958, pp 240-303

ABSTRACT: A short review is given of the advances in digital differential analyzers; their principal advantages and disadvantages are listed. The principles of design and operation of the digital differential analyzer are explained by a block diagram of a digital computer controlling a real system. Methods of encoding positive and negative numbers in a digital computer are briefly set forth. Integrating operations are described in detail. A series integrating system with a magnetic drum and methods of connecting integrators are examined in detail. A method of connecting integrators by means of a delay line is described. Methods of feeding information and switching the

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SOV/112-59-5-9561

Digital Integrating Machines

machine for solving various problems are briefly described. Characteristics and applications of a follow-up integrator are described in detail. Methods for obtaining scale factors and for forming functions are described. Methods for introducing the functions into the computer by means of perforated tapes are examined in detail; also, the functions presented by a graph and graphical recording of results are described. Thirty-one illustrations.

Bibliography: 7 items.

B. I. Z.

Card 2/2

Mayorov, F.V.

25(1)	PHASE I BOOK EXPLOITATION	SOV/2383
	Academiya nauk SSSR. Konseitsiya po tekhnologii mashinostroyeniya	
	Automatizatsiya mashinostroyeniya. t. II. Privod i upravleniye rabotnymi mashinami (Automation of Machine-Building Processes. Vol.2: Drives and Control Systems for Process Machinery) Moscow, Izd-vo AN SSSR, 1959. 370 p. Errata slip inserted. 5,000 copies printed.	
	Ed.: V.I. Dikushin, Academician; Ed. of Publishing House: D.M. Ioffel Tech. Ed.: I.P. Kur'min.	
	PURPOSE: This book is intended for engineers dealing with automation of various machine-building processes.	
	COVERBACK: This is the second volume of transactions of the second Conference on Overall Mechanization and Automation of Manufacturing Processes held September 25-29, 1956. The present volume contains three parts, the first dealing with automatic control of engineering measuring methods. The subjects discussed include automatic control of dimensions of machined parts, inspection methods for automatic production lines, in-process inspection devices, application of electronics in automating linear measuring processes, and machines for automatic detection of bearing races. The second part deals with automatic drives and control systems for process machinery, including application of digital computers in the control of metal-cutting machine tools, reliability of relay systems, application of gas-tube frequency converters, the control of induction motor speeds, magnetic amplifiers and their use in automatic systems, hydraulic circuits and ultrasonic vibrators. Part three deals with automatic production lines. The subjects discussed include three-deck indexing and Geneva-wheel-type mechanisms, friction drive, automatic loading devices, diaphragm-type pneumatic drives, various auxiliary devices for automatic production lines, and methods of design and accuracy of cams. No personalities are mentioned. There are no references.	
	Gorodetskiy, I. Ye. Deceased . Automatic Control of Dimensions in Machine Building	5
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	Maydis, V.A. Controlled Electric Drive for Metal-cutting Levitskiy, N.I. Development of the Theory of Mechanisms of Automatic Machines	203
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28(2)

PHASE I BOOK EXPLOITATION SOV/2676

Mayorov, Fedor Vasil'yevich, Doctor of Technical Sciences, Professor

Elektronnyye vychislitel'nyye mashiny i ikh primeneniye (Electronic Computers and Their Application) Moscow, Voen. izd-vo M-va obor. SSSR, 1959. 234 p. (Series: Nauchno-populyarnaya biblioteka)
No. of copies printed not given.

Ed.: A.I. Moskvina, Doctor of Technical Sciences, Engineer-Colonel; Ed. of Publishing House: Ya.M. Kader; Consultant of Publishing House: Ye. I. Mamonov, Candidate of Technical Sciences; Tech. Ed.: M.A. Strel'nikova.

PURPOSE: This book is intended for the reader acquainted with fundamentals of electrical engineering and interested in the construction and application of computers.

COVERAGE: The author discusses the principle of operation of electronic computers. Chief attention is given to the elements

Card 1/4

Electronic (Cont.)

SOV/2676

of digital computers using vacuum tubes, crystal diodes, transistors and ferrite cores. Application of computers in accounting, statistics and for military purposes is also discussed. No personalities are mentioned. There are 16 references, all Soviet (including 2 translations).

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AVAILABLE: Library of Congress

Card 4/4

JP/jb
11-25-59

MAYOROV, Fedor Vasil'yevich; STROGANOV, L.P., inzh., red.izd-va;
MODEL', B.I., tekhn.red.; SMIRNOVA, G.V., tekhn.red.

[Electronic digital integrating machines; digital differential
analyzers] Elektronnye tsifrovye integriruiushchie mashiny;
tsifrovye differentsial'nye analizatory. Moskva, Mashgiz,
1962. 407 p. (MIRA 15:5)

(Electronic digital computers)
(Electronic differential analyzers)

L 25765-65 EWT(d)/EWP(1)/EED-2 Po-4/Pq-4/Pg-4/Pk-4 IJP(c) BB/00/MLK

ACCESSION NR: AT5002506

S/0000/64/000/000/0222/0229

AUTHOR: Bleyvas, I. M.; Zelinskiy, E. M.; Mayorov, F. V.; Sergiyenko, V. I.

TITLE: The use of a numerical differential analyzer¹⁵ to automate the solution of self-adjustment problems concerning the field and trajectories in electronic devices

SOURCE: Analogovyye metody i sredstva resheniya krayevykh zadach (Analog methods and means of solving boundary value problems); trudy Vsesoyuznogo soveshchaniya, Moskva, 1962 g. Kiev, Naukova dumka, 1964, 222-229

TOPIC TAGS: electric field, differential equation, boundary value problem, trajectory, integrator, electrosimulation, differential analyzer, analog computer, self adjustment problem, charged particle

ABSTRACT: The paper presents a method of solving the problem of a "self-adjusting" field, i.e., the calculations of the influence of a spatial charge on the distribution of the electric field and on the trajectories of charged particles in the field. The method makes use of a TsIM numerical integrator, which is fully described in the paper, and has an accuracy of within 1%. The equations of the pro-

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ACCESSION NR: AT5002506

blem, which are derived elsewhere, are put into suitable form for simulation on the Tsim. The author then presents block diagrams which describe the functional breakdown of the machine and the way in which the inputs are used in order to arrive at a solution to the problem of the self-adjusting field. Orig. art. has: 5 figures and 6 formulas.

ASSOCIATION: None

SUBMITTED: 05Sep64

ENCL: 00

SUB CODE: DP, NP

NO REF SOV: 004

OTHER: 000

Card 2/2

L 27890-65 EWT(d)/EWP(1)/EED-2 Po-4/Pq-4/Pae-2/Pg-4/Pk-4/Fl-4 IJP(c) BB/GG/CG/BC
ACCESSION NR: AT5003949 8/0000/64/000/000/0248/0257

AUTHOR: Mayorov, F. V.; Genis, Ya. G.; Babich, G. Kh.

TITLE: Combined control computer 160

SOURCE: Nauchno-tekhnicheskoye obshchestvo priborostroitel'noy promyshlennosti.
Nauchno-tekhnicheskoye soveshchaniye. 3d, Moscow, 1962. Vychislitel'naya tekhnika dlya avtomatizatsii proizvodstva (Computer technology for the automation of production).

nika dlya avtomatizatsii proizvodstva (Computer technology for the automation of production); trudy soveshchaniya. Moscow, Izd-vo Mashinostroyeniye, 1964, 248-257

TOPIC TAGS: control computer, digital computer, incremental computer, real time computer

ABSTRACT: The author describes a real-time system combining an arithmetical digital computer and an incremental computer with variable increment intervals. Such a system can be used to carry out simultaneously uncorrelated calculations (processing and sorting of data) and follow with high accuracy a continuously varying process. The use of an incremental computer in lieu of a digital differential analyzer makes it possible to control long-duration processes without the need for correcting null drift. The main algorithm and its modifications for the

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ACCESSION NR: AT5003949

operations of addition, multiplication, division, extraction of roots, integration, and differentiation are given. The block diagrams of the incremental computer and of the arithmetic digital computer are briefly described. The main logic element employed is a standard cell with capacitor memory and transistor amplifier, the operation of which is described. The computer can be used for real-time control of fast continuous production processes, for control of discrete processes (in which the incremental computer is used for the direct control and the digital part coordinates the operations in different parts of the system), in systems where several problems with cyclic sampling must be solved, and in self-adaptive systems

Several problems with cyclic sampling must be solved, and in self-adaptive systems in which the control equations remain unchanged but some parameters must be adapted to changing conditions for optimization purposes. Orig. art. has: 3 figures and 18 formulas.

ASSOCIATION: None

SUBMITTED: 01Sep64

ENCL: 00

SUB CODE: DP

NR REF SOV: 001

OTHER: 004

Card 2/2

ACC NR: AP7009560

SOURCE CODE: UR/0233/66/000/002/0071/0075

AUTHOR: Zul'fugarzade, E. E.; Mayorov, F. V.

ORG: none

TITLE: Compatibility of machines in a particular computing complex

SOURCE: AN AzerbSSR. Izvestiya. Seriya fiziko-tekhnicheskikh i matematicheskikh nauk, no. 2, 1966, 71-75

TOPIC TAGS: digital computer, algorithm

SUB CODE: C9, 12

ABSTRACT: The machine compatibility considered includes uniform programming, easy recoding of one machine program into the languages of the other machines of the complex, the selection of registers of the various machines and the recoding of words in one format into words of another format, and the management and exchange of information between the machines in the complex. Problems involved depend largely on the cycling speeds of the arithmetic units, operational memories, I/O units, the structures of the functional algorithms, and system configurations in the light of machine compatibility.

The complex studied consists of digital computers and digital-incremental machines. The organization of the various parts of the system to solve various problems is considered in detail. Orig. art. has: 2 figures and 9 formulas.
[JPRS: 39,848]

Card 1/1

UDC: none

0036 1084

MAYOROV, G.A. (Moskva, A-315, I Baltiyskiy pereulov, d.3/25)

Changes in the coagulation and anticoagulation system of the
blood in operative treatment of aortic coarctation. Grud. khir.
6 no.5:57-62 S-O '64. (MIRA 18:4)

1. Otdeleniye khirurgii sosudov (zav. - prof. Yu.Ye.Berezov)
i biokhimicheskaya laboratoriya (zav. - prof. Ye.P.Stepanyan)
Instituta serdechno-sosudistoy khirurgii (dir. - prof. S.A.
Kolesnikov; nauchnyy rukovoditel' - akademik A.N.Bakulev) AMN
SSSR, Moskva.

MAYOROV, G. S.

6878. Mayorov, G. S. Mekhanizatsiya rabot pri remonte detaley i uslov tsel'nomstallicheskikh vagonov. (Opyt vagonoremontnykh zavodov im. Boytoricha, Otrzhanskogo i Nizhnedneprovskogo). M., PKB. TsTVR, 1954. 24s. s ill. 20 sm. (M-vo putey soobshcheniya SSSR. Glav. Upr. Logomotivoremontnymi i vagonoremontnymi zavodami. Inform. Pis'mo po obмену передовым опытом. Vyp. 28(241)). 1.250 ekz. B. ts. — Spst. Ukazan v kontse teksta — (55-31) 625.26.0025

SO: Knizhnaya Letopis' No. 6, 1955

MAYOROV, G. S.

7837. MAYOROV, G. S.—Mekhanizatsiya razl'orochnykh i storochnykh rabot priremonte tsel'nometallicheskiykh vagonov. (opyt vagonoremontnykh zavodov im. voytovicha, otrozhskogo, N. Dneprovskogo i oktyabr'skogo). M., Pkhtstvm 1954. 40 s. s ill 20 sm (mps ssr. glav. upr. lokomotivo-remontnymi i vagonoremontnymi zavodami. Inform. Pis'mo po obmemuperedovym opytom. vy. no 30 (243). 1.250 ekz b. ts.—sost. ukazan na oborote tit. L. (55-662 2H)

625-26.0025 st.

SO: KNIZHNAYA LETOPIS', Vol. 7, 1955

MAYOROV, G.V., Inzh.

Use of medium-pressure fans in grain cleaning. Mekh. i elek. sots.
sel'khoz. 20 no.1:40-41 '62. (MIRA 15:2)

1. Volgogradskiy sel'skokhozyaystvennyy institut.
(Grain--Cleaning)

MAYOROV, I., elektroobmotchik

Nearer to life. WFO no.10:25-26 O '59.

(MIRA 13:2)

1.Moskovskiy zavod im. Vladimira Il'icha.
(Research, Industrial)

MAYOROV, I

MAYOROV, I.; ANCHISLAVSKIY, F.

The administration of production outside of the workshop. Data.
trud no.9:122-127 S '57. (MIRA 1959)

1. Direktor zavoda delitel'nykh golovok (for Mayorov). 2. Nachal'nik
proizvodstva zavoda delitel'nykh golovok (for Anchislavskiy).
(Machine industry--Production standards)

USANOV, P.; BLOKH, V.; KABANOV, N.; MAYOROV, I.; AMCHISLAVSKIY, P.

Reduction of staff personnel is an essential matter. Sots.trud
no.3:105-126 Mr '58. (MIRA 13:3)

1. Nachal'nik otдела organizatsii proizvodstva tekhnicheskogo
upravleniya Leningradskogo soveta narodnogo khozyaystva (for
Usanov). 2. Direktor zavoda svetotekhnicheskikh izdeliy (for
Blok). 3. Nachal'nik otдела truda i zarplaty Pervogo gosudarstven-
nogo podshipnikovogo zavoda (for Kabanov). 4. Direktor Leningrad-
skogo zavoda delitel'nykh golovok (for Mayorov). 5. Nachal'nik
proizvodstva Leningradskogo zavoda delitel'nykh golovok (for
Amchislavskiy).

(Leningrad--Industrial organization)

MAYOROV, I.A.
MAYOROV, I.A.

Karpov chemical and pharmaceutical plant during the Soviet regime.
Med.prom. 11 no.8:25-32 Ag '57. (MIRA 10:11)
(CHEMISTRY, MEDICAL AND PHARMACEUTICAL)

MAYOROV, I.A.

Fulfillment of the seven-year plan ahead of time. Med. prom 13 no.11:
6-9 N '59. (MIRA 13:3)

1. Moskovskiy khimiko-farmatsevticheskiy zavod imeni L.Ya. Karpova.
(DRUG INDUSTRY)

MAYOROV, I.A.

Brigades of Communist labor in the struggle for the fulfillment of socialist obligations. Med. prom. 14 no.9:7-10 S '60.

(MIRA 13:9)

1. Moskovskiy khimiko-farmatsevticheskiy zavod imeni L.Y.Karpova.
(DRUG INDUSTRY)

MAYOROV, I.A.

Use of computers in optical spectrum analysis; review.

Zav. lab. 31 no. 12:1512-1519 '65 (MIRA 19:1)

VEKSLER, I.I.; MAYOROV, I.K.

Stepwise footage of deep wells. Trudy VNIING no.2.13-19 '66.
(MIRA 17:5

VEKSLER, I.I.; MAYOROV, I.K.

Multistage drilling of deep wells. "Budy VNIIIG no. 5:13-19 '63.
MIRA (7:10)

L 41364-66 E.I.I.E. / I.I.P.(j)/EWP(t)/ETI IJP(c) JD/JAJ/RM
ACC NR: AP6022437 (A) SOURCE CODE: UR/0064/66/000/004/0037/0040

AUTHOR: Semenova, T. A.; Markina, M. I.; Shteynberg, B. I.; Kozlov, L. I.; Mayorov, I. K.

ORG: none

TITLE: Low-temperature catalyst for the carbon monoxide conversion process

SOURCE: Khimicheskaya promyshlennost', no. 4, 1966, 37-40

TOPIC TAGS: carbon monoxide, industrial catalyst, HYDROGEN, WATER VAPOR

ABSTRACT: The paper discusses the properties of a low-temperature catalyst, developed at GIAP, for the conversion of carbon monoxide and water vapor into hydrogen. The main components of the catalyst are compounds of zinc, chromium, and copper. The presence of sulfur compounds in the gas rapidly reduces the catalyst's activity. Long-term tests showed the operation of the catalyst to be stable over a period of one year. A gradual decrease in activity is due not only to poisoning with sulfur compounds, but also, as indicated by x-ray diffraction analysis, to a gradual recrystallization of the catalyst. The catalyst was then tested in a pilot plant unit with a capacity of 1000 m³ of gas per hour. The results permit the authors to recommend the industrial use of the low-temperature catalyst studied. Orig. art. has: 7 tables.

SUB CODE: 07/ SUBM DATE: none/ ORIG REF: 006/ OTH REF: 007

Cord

1/1

UDC: 661.961.5:66.097.3-974

MAYOROV, I.M., inzh.; GOLUBKIN, B.P., inzh.

Determining the expenditure of car-hours for car accumulation in
classification yards. Znel.-dor. tras., 45 no. 12:76-77 1963.

(MIRA 17:2)

1. Glavnyy inzh. stantsii Lyublino Moskovskoy dorogi (for Mayorov).

MAYOROV, I.M.

Production Combine "Severokhod" Yaroslavl. Komm. obshch. prava. 6 str. 21
18-22 Ag '64. (MIR 17:10)

1. General'nyy direktor kuzhennogo-obuvnogo ob'yedineniya "Severokhod",
Yaroslavl.

MAYGROV, I.V., kandidat pedagogicheskikh nauk.

Industrial training of students in grades 7-10. Politekh. obuch. no.1:
26-31 Ja '57. (MIRA 10:4)

1. Iz opyta raboty sredney shkoly no.35 g. Voronezha.
(Technical education)

MAYOROV, I.V.

MAYOROV, I.V., kandidat pedagogicheskikh nauk.

Vocational guidance in the secondary school and reasons given by
10th grade students for selecting a profession. Politekh.obuch.
no.2:23-31 P '57. (MLRA 10:5)
(Vocational guidance)

MAYOROV, I. V.

Dissertation: "Extension of S. A. Chaplygin's Theorem of Differential Equations to Arbitrary Linear Partial Differential Equations of the Second Order." Cand Phys-Math. Sci, Moscow State Pedagogical Institute V. I. Lenin, 10 May 54. (Vechernyaya Moskva, Moscow, 29 Apr 54)

SO: SUM 243, 19 Oct 1954

AUTHOR: Mayorov, I.V. SOV/140-58-3-19/34
TITLE: On the Approximative Solution of the Equations of Elliptic Type (0 priblizhennom reshenii uravneniy ellipticheskogo tipa)
PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy . Matematika, 1958, Nr 3, pp 160-162 (USSR)
ABSTRACT: The author uses the theorem of Chaplygin on differential inequalities for the construction of the upper lower approximation of the solution of

$$\frac{\partial^2 z}{\partial x^2} + \frac{\partial^2 z}{\partial y^2} + a \frac{\partial z}{\partial x} + b \frac{\partial z}{\partial y} + cz = 0 .$$

ASSOCIATION: There are 3 references, 2 of which are Soviet, and 1 is French. Stalingradskiy pedagogicheskiy institut (Stalingrad Pedagogical Institute)
SUBMITTED: January 11, 1958

Card 1/1

MAYOROV, I. V.

Extension of S. A. Chaplygin's theorem on differential
inequalities to mixed type equations. Uch. zap. Volg. gos.
ped. inst. no.11:190-208 '59. (MIRA 16:1)

(Differential equations, Linear)
(Inequalities(Mathematics))

MAYOROV, I. V.

Approximate solution to Cauchy's problem for hyperbolic
systems with two independent variables using S. A. Chaplygin's
method. Uch. zap. Volg. gos. ped. inst. no.11:209-211 '59.
(MIRA 16:1)

(Differential equations, Linear)

MAYOROV, I.V. (Volgograd)

Principle of the maximum and its consequences for mixed-type
equations. Volzh. mat. sbor. no.1:145-155 '63.

(MIRA 19:1)

MAYOROV, K.P.

New method of heat treating reinforced concrete panels and slabs
on bench production. Stroi. ind., stroi. mash. i mekh. no.1:12-20
'62. (MIRA 17:9)

1. Kontora "Industroyproyekt" Nauchno-issledovatel'skogo instituta
organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu.

MAYOROV, K.P.

Bituminous perlite, a new heat insulating and waterproofing material. Stroi. ind., stroi. mash. i mekh. no.1:21-25 '62. (MIRA 17:9)

1. Kontora "Industroyproyekt" Nauchno-issledovatel'skogo instituta organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu.

MAYOROV, K.P.

Improving mold and form machinery for preparing reinforced
concrete products. Stroi. ind., stroi. mash. i mekh. no.1:
46-53 '62. (MIRA 17:9)

1. Kontora "Industroyproyekt" Nauchno-issledovatel'skogo instituta
organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu .

MAYOROV, L.

Radio reception and diffusion center for rural areas. Prof.-tekh.
obr. 11 no.7:26 0 '54. (MIRA 7:11)

1. Direktor remeslennogo uchilishcha No. 10 (g. Novosibirsk)
(Novosibirsk--Radio--Study and teaching)

SERGIYENKO, Semen Romanovich. Prinimali uchastiye: SKLYAR, V.T.; GORDASH, YU.T.; MAYOROV, L.S.; ZHDANOVA, N.V.; DAVYDOV, B.M.; LEBEDEV, Ye.V.; TETERINA, M.F.; L'VOVA, L.A., vedushchiy red.; TROPIMOV, A.V., tekhn.red.

[High molecular weight compounds in petroleum] Vysokomolekuliarnye soedineniya nefti. Moskva, Gos.nauchno-tekhn.isd-vo nefi. i gorno-toplivnoi lit-ry, 1959. 412 p. (MIRA 12:12)
(Petroleum--Analysis) (Macromolecular compounds)

SERGIYENKO, S.R.; NOZHKINA, I.A.; MAYOROV, L.S.

Character of the sulfur distribution in the high molecular weight
hydrocarbon fraction of Romashkino crudes. Khim.sera i azotorg.soed. sod.
v neft.i nefteprod. 3:173-182 '60. (MIRA 14:6)

1. Institut geologii i razrabotki goryuchikh iskopayemykh AN SSSR.
(Hydrocarbons) (Sulfur)

SERGHIEENKO, S.R. [Sergiyenko, S.R.]; NOJKINA, I.A. [Nozhkina, I.A.];
MAIOROV, L.S. [Mayorov, L.S.]

Separation of macromolecular compounds of petroleum by the combined
method of molecular distillation and chromatography. *Analele*
chimie 15 no.4:127-135 O-D '60. (EEAI 10:3)
(Macromolecular compounds) (Petroleum)
(Hydrocarbons) (Distillation) (Chromatography)

24.5300

S/208/62/002/002/011/014
D234/D301

AUTHOR: Mayorov, L.V.

TITLE: On the effect of stream anisotropy on the temperature of neutron gas

PERIODICAL: Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki, v. 2, no. 2, 1962, 349 - 351

TEXT: The author refers to the results of Kottwitz and investigates the same problem without assuming the stream to be isotropic. The purpose is to find the effect of anisotropy on energetic moments of neutron stream for different temperature distribution and to estimate the accuracy of diffusion approximation. An expression is deduced for the first moment. There are 3 references: 1 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: D.A. Kottwitz, Thermal neutron flux spectrum in a medium with a temperature discontinuity, Nucl. Sci. and Engrs. 1960, 7, 345 - 360; H. Hurwitz, Jr., M.S. Nelkin, G.J. Habetler. Neutron thermalization,

VB

Card 1/2

On the effect of stream anisotropy .. ^{S/208/62/002/002/011/014}
D234/D301

Nucl. Sci. and Engrs, 1956, 1, 280 - 312

SUBMITTED: October 12, 1961

Card 2/2

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43920
S/208/62/002/004/005/008
1046/1246

AUTHOR: Mayorov, L. V. (Moscow)

TITLE: Distribution of thermal neutrons in a medium with a plane source

PERIODICAL: Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki, v. 2, no. 4, 1962, 635-651

TEXT: In an infinite nonmultiplying homogeneous medium, the neutron flux $\Phi(E, z)$ at large distances from the plane source is given by

$$\Phi(E, z) = \sum_i e^{-\sqrt{\lambda_i}|z|} \phi_i(E) + O(e^{-\delta|z|}),$$

where $\delta = \sqrt{\min\{3\sigma_a(\sigma_a + \sigma_s)\}}$, E the energy of neutrons, z the spatial coordinate. In a subcritical medium with neutron multiplication

$$\Phi(E, z) = \phi_0(E)e^{-k_0|z|} + O(e^{-k_0|z|})$$

where $k_0 = \sqrt{\lambda_0}$. The effects of neutron multiplication on the thermal neutron spectrum are studied in detail for a heavy monoatomic gaseous moderator with an absorption cross section $\sigma_a = a + b/E$; essential effects can be expected in the region of epithermal energy. The asymptotic neutron density in a stratified moderator (subcritical lattice mounted on the reactor) is given by

$$\Phi(E, z, r) = \phi_0(E, r)e^{-k_0|z|} + O(e^{-k_0|z|})$$

Card 1/2

Distribution of thermal...

S/208/62/002/004/005/008

I046/1246

Comparison with Ref. 1 (W. P. Stinson, L. C. Schmid, R. E. Heineman. An investigation of effective neutron temperature. Nucl. Sci. and Engng, 7, 435.441) shows that the thermal neutron spectrum is strongly affected by the criticality. The numerical procedure developed for the calculation of $\phi(E,r)$ is suitable also for in-homogeneous media. There are 2 figures.

SUBMITTED: March 26, 1962

X

Card 2/2